REMARKS

The Examiner is thanked for the careful review of this application. In the specification, paragraphs [0024] and [0025] have been amended to correct minor editorial problems.

Figures 1-8 have been formalized as requested by the Examiner. Originally filed FIG. 5A missed numbered elements 162a-41, 162a-42, and 162a-43. These element numbers have been corrected to read 160a-41, 160a-42, and 160a-43. Originally filed FIG. 8 had a double arrow dear the "done" operation at the end of the flowchart. This has been removed to match the description.

Claims 6, 7, 11, 13, and14 have been cancelled. Claims 1-5, 8-10, 12, and 15-21 remain in this application. Claims 1-5, 8-9, and 15 have been amended. Independent claims 1, 9, and 15 have been amended, in general, to require defining a statistics window and a reporting window, and incrementing the beginning time and ending time of the statistics window by one reporting window, described in greater detail below.

Claims 11 and 14 were rejected under 35 U.S.C. §112. Claims 11 and 14 have been cancelled. Claims 1-8, and 15-21 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,662,278 to Kahn et al. (hereinafter "the Kahn patent"). In addition, claims 9, 10, 12, and 13 were rejected under 35 U.S.C. §103(a) as obvious over applicant's admitted prior art in view of the Kahn patent. It is respectfully submitted that independent claims 1, 9, and 15, as amended, are allowable over the art of record.

Independent claim 1 has been amended to require defining at least one statistics window that has a beginning time and an ending time. For example, FIG. 5A of the present application illustrates a statistics window 160a-12 having a beginning time of t0 and an ending time of t4. In addition, claim 1 has been amended to require defining a reporting window that defines a time interval that the statistics window is updated. For example, FIG. 5A of the present application illustrates a reporting window 162a-1. Claim 1 has further been amended to require assigning a bandwidth limit over the statistics window to a port associated with a multi-port memory controller.

As described in paragraphs [0029] and [0030] of the present application, the statistics window is updated with the amount of bandwidth a requestor has used during the reporting window, thus reporting the bandwidth of the port every reporting window cycles. As required by claim 1, if the amount of bandwidth used during the statistics window is greater than the bandwidth limit, access is denied to the port during the next reporting window.

The Kahn patent does not disclose denying access to the port during the next reporting window if the amount of bandwidth used during the statistics window is greater than the bandwidth limit, as required by claim 1. In contrast, the Kahn patent "permits words to be written to or read from memory during the throttle-monitoring window....regardless of the number of words read from or written to memory during the sampling window." Kahn, col. 3, ll. 33-38. Indeed, the Kahn patent teaches allowing the access to the memory to continue if bandwidth exceeds the bandwidth limit. For example, in step 408 of FIG. 4 in the Kahn patent, "if the masking tool 290 determines that the number of memory accesses exceeds the number of allowed accesses 506a, or the percentage of memory bandwidth was exceeded, the masking tool 290 permits the memory to be accessed until the end of the throttle-monitoring window 504a." Kahn, col. 7, ll. 7-12.

Furthermore, the Kahn patent does not teach increasing the beginning time of the statistics window and the ending time of the statistics window by an amount of time equal to the reporting window, as required by amended claim 1. Claim 1 has been amended to require increasing the beginning time and the ending time of the statistics window by an amount of time equal to the reporting window. Embodiments of the present invention effectively 'slide' the statistics window by increments of the reporting window every cycle. In this manner, a more accurate determination of recent bandwidth use can be obtained. This is accomplished by defining a plurality of statistics windows, as shown in FIG. 5A, each offset from each other by one reporting window. This is illustrated in FIG. 5A by statistics windows 160a-11, 160a-21, 160a-31, and 160a-41. During operation, statistic window 160a-11 is used to determine bandwidth usage. Next clock cycle, statistic window 160a-21 is used to determine bandwidth usage, then statistic window 160a-31, then statistic window 160a-41, and then statistic window 160a-12, etc. As can be seen, this effectively 'slides' the

statistics window along a 'time line' by increments of a reporting window. Thus, providing an accurate measure of resent bandwidth usage by a particular requestor. FIG. 5A and paragraph [0030] of the present application illustrate this. Applicants examined the Kahn patent but could not find a statistics window as defined in claim 1. However, Applicants did note that the Kahn patent does not disclose incrementing the beginning time or ending time of any of its monitoring time frames, such as the "sampling window" or "throttle-monitoring window."

Accordingly, Applicants submit that independent claim 1, as amended, is patentable over the art of record. For at least the same reasons as set forth above with respect to claim 1, claims 2-5 and 8, which depend from independent claim 1, are believed to be patentable over the art of record. Furthermore, independent claims 9 and 15, and dependent claims 10 and 12, and 16-21, respectively, are submitted to be patentable over the art of record for at least the same reasons as set forth above with respect to claim 1.

In view of the foregoing, the Applicant respectfully submits that all pending claims in the present application are in condition for allowance, and a notice of allowance is respectfully requested. In the event a telephone conversation would expedite prosecution of this application, the Examiner may reach the undersigned at (909) 758-5145.

Respectfully submitted,
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Attachments

AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings are formal drawings of the originally submitted informal drawings. These sheets, which include FIGs. 1-8, replace the original sheets including FIGs. 1-8. Originally filed FIG. 5A missed numbered elements 162a-41, 162a-42, and 162a-43. These element numbers have been corrected to read 160a-41, 160a-42, and 160a-43. Originally filed FIG. 8 had a double arrow dear the "done" operation at the end of the flowchart. This has been removed.

Attachment: 9 Replacement sheets